

A B S T R A C T

An active magnetic bearing (100) with autodetection of position, the bearing comprising at least first and second opposing electromagnets (120, 130) forming stators disposed on either side of a ferromagnetic body (110) forming a rotor and held without contact between said electromagnets. The first and second electromagnets (120, 130) each comprising a magnetic circuit (121; 131) essentially constituted by a first 5 ferromagnetic material and co-operating with said ferromagnetic body to define an airgap, together with an excitation coil (122; 132) powered from a power amplifier whose input current is servo-controlled as a function of the position of the ferromagnetic body relative to the magnetic 10 circuits of the first and second electromagnets. The position 15 of the ferromagnetic body (110) being measured from the inductance detected between the two electromagnets (120, 130) in response to simultaneous injection into both opposing electromagnets of a sinusoidal current at a frequency that is 20 greater than the closed loop passband of the system. The magnetic circuit (121; 131) of each electromagnet further includes a portion (124; 134) in the vicinity of the excitation coil (122; 132) that uses a second ferromagnetic material having magnetic permeability that is lower than that 25 of the first material and electrical resistivity that is higher than that of the first material so as to encourage the passage of the high frequency magnetic fields that are generated in the bearing.